

REMARKS

The Official Action dated October 24, 2002 has been carefully considered. Accordingly, the changes presented herewith, taken with the following remarks, are believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

By the present Amendment, the specification has been amended to correct various typographical errors in the formulas at pages 4, 8 and 9. Support for these changes may be found in the detailed discussion of the compounds represented by the formulas at pages 8-10. Claim 3 has also been similarly corrected. The remaining claims have been amended for various matters of form only. A Version With Markings Showing Changes Made is attached. It is believed that these changes do not involve any introduction of new matter, whereby entry is believed to be in order and is respectfully requested.

In the Official Action, claim 3 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner noted that in lines 3-5 of claim 3, L is defined as a leaving group, however no L appears in the preceding formula. This rejection is traversed and reconsideration is respectfully requested. That is, claim 3 has been amended to correct a typographical error in the formula in subparagraph (a), to thereby contain the variable L. It is believed that claim 3 is definite whereby the rejection has been overcome. Reconsideration is respectfully requested.

Claim 15 was objected to under 37 C.F.R. 1.75(c) as being of improper dependent form for failing to further limit the subject matter of the previous claim. The Examiner asserted that the recitation in claim 15 of "less than about 25%" is broader than the recitation in claim 1 from which claim 15 depends of "less than 25%". The Examiner also noted a typographical error in claim 15. This objection is traversed and reconsideration is respectfully requested. That is, claim 1 has been amended to recite a fiber degradation

increase of less than about 25%, as set forth in claim 15, and claim 15 has been amended to correct the typographical error. It is therefore submitted that claim 15 properly limits the subject matter of claim 1 from which it depends, whereby the objection has been overcome. Reconsideration is respectfully requested.

Claims 1-15 and 18-33 were rejected under 35 U.S.C. §102(b) as being anticipated by each of the Willey et al published PCT application WO 94/28106, the Showell et al U.S. Patent No. 5,419,847, the Francis et al U.S. Patent No. 5,106,528, and the Thompson et al U.S. Patent No. 4,483,778. Claims 1-33 were rejected under 35 U.S.C. §102(b) as anticipated by the Croud et al published PCT application WO 95/21283.

As will be set forth in detail below, Applicants submit that the methods, products and substrates defined by present claims 1-33 are not anticipated by and are patentably distinguishable from the teachings of Willey et al, Showell et al, Francis et al, Thompson et al and Croud et al. Accordingly, these rejections are traversed and reconsideration is respectfully requested.

According to claim 1, the invention is directed to a method for the preparation of a non-finished textile component. The method comprises providing a non-finished textile component, saturating the textile component with an aqueous bleaching solution comprising hydrogen peroxide and a hydrophobic bleaching agent, and allowing the bleaching solution to remain in contact with the textile component for a period of time sufficient to bleach the textile component. The resulting treated textile component has a whiteness value on the CIE index of at least about 70 or a fiber degradation increase of less than about 25%.

According to claim 18, the invention is directed to a method for the batch preparation of a woven textile fabric. The method comprises providing an incoming non-finished woven fabric, passing the fabric to an aqueous bleaching solution comprising a mixture of hydrogen peroxide and a hydrophobic bleach activator or a pre-formed hydrophobic activator, heating

the bleaching solution to a temperature of from about 20 to about 90°C, and allowing the bleaching solution to contact the fabric for a period of time of from about 15 to about 180 minutes.

Claims 26 and 27 are directed to products produced by the processes of claims 1 and 18, respectively. Claim 28 is directed to a substrate comprising a collection of non-finished bleached textile components wherein the substrate has a whiteness value on the CIE index of greater than about 70 and has experienced fabric strength reduction of less than about 10%.

Finally, according to claim 31, the invention is directed to a method for improving the wettability loss of textile components. The method comprises providing an incoming non-finished woven fabric, passing the fabric to an aqueous bleaching solution comprising a mixture of hydrogen peroxide and a hydrophobic bleach activator or a pre-formed hydrophobic activator, heating the bleaching solution to a temperature of from about 20 to about 90°C, and allowing the bleaching solution to contact the fabric for a period of time of from about 15 to about 180 minutes.

As set forth in the present specification, for example at page 18, beginning at line 6, non-finished textile components are materials that have not been dyed, printed or otherwise provided a finishing step such as a durable press finish. One of ordinary skill in the art will therefore recognize that the textile component of the claimed methods, products and substrates has not been passed through a garment or other manufacturing process involving cutting and sewing of the material. As also set forth in the specification, for example beginning at page 1, line 29, bleaching of such non-finished textile components is desirable in order to destroy naturally occurring color bodies and provide a uniform white appearance for consumer-acceptable whites and/or a uniform color base for subsequent dyeing or printing of the components.

In contrast to the present methods, products and substrates which employ non-finished textile components, Willey et al, Showell et al, Francis et al and Thompson et al all relate to bleaching and/or laundering of finished textile components, namely garments, and Applicants find no teaching or suggestion in any of these references relating to any method, product or substrate employing a non-finished textile component. For example, Willey et al disclose bleaching compounds for laundry detergent compositions employed to provide effective and efficient surface cleaning of fabrics to remove stains and/or soils from the fabrics (page 7, lines 17-19). Showell et al disclose aqueous liquid bleach compositions for laundering soiled clothes, fabrics and the like (column 7, line 66 - column 8, line 8). Francis et al disclose bleaching and detergent compositions which can be used in any cleaning product requiring bleach and/or hygiene properties, such as, for example, laundry detergents, laundry bleaches, household cleaners, toilet bowl cleaners, automatic dishwashing compositions, denture cleaners, etc. (column 13, lines 9-14). Finally, Thompson et al disclose peroxygen bleach activators and bleaching compositions for detergent compositions (abstract) and for removal of stains and/or soils from textiles and, particularly, removal of dingy soils which are a blend of particulate and greasy materials that build up on textiles after numerous washings (column 6, lines 6-14).

Anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference, *In re Robertson*, 49 U.S.P.Q.2d 1949, 1950 (Fed Cir. 1999). In view of the failure of any of Willey et al, Showell et al, Francis et al and Thompson et al to teach methods, products or substrates employing non-finished textile components as required by the present claims, none of these references disclose each and every element, either expressly or inherently described, and therefore do not anticipate the present claims under 35 U.S.C. §102.

Finally, Croud et al disclose a process for bleaching textiles wherein fibers are formed into a yarn in a first step, a peroxygen source and a bleach activator compound which is an acyl donor are reacted in an aqueous solution to form a product solution comprising an oxidizing compound which is a stronger oxidizing agent than the peroxygen source, the step being carried out at an acidic pH below the pKa of the carboxylic acid corresponding to the acyl group of the activator, and, in a third step, contacting the yarn with the product solution at an acidic pH no greater than the aforementioned pKa (page 5, lines 19-32). At page 29, Example 2, Croud et al disclose the use of TAED, DADHT and SNOBS as activators for peroxygen bleaches at acidic pH for stains in solution and on fabrics. Specifically, cotton cloth was stained with chlorophyll. Thus, Example 2 of Croud et al is not directed to a method for the preparation of non-finished textile component as recited in claim 1, a method for the batch preparation of a woven textile fabric comprising an incoming non-finished woven fabric as recited in claim 18, a collection of non-finished bleached textile components as recited in claim 28 or a method for improving the wettability loss of textile components comprising, inter alia, providing an incoming non-finished woven fabric as recited in claim 31. Rather, Example 2 of Croud et al is directed to stain removal. In view of these deficiencies in the teachings of Croud et al, Croud et al do not anticipate the presently claimed methods, products or substrates.

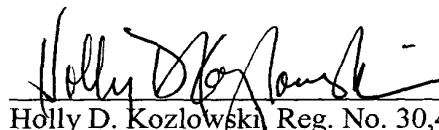
Moreover, the claimed methods, products and substrates defined by the dependent claims are further distinguishable from the specific teachings of Croud et al. For example, while Croud et al teach the necessity of a low pH, in fact lower than the pKa of the carboxylic acid corresponding to the acyl group of the activator, the method of claim 12 requires that the bleaching solution further comprises from about 0.5 to about 20 g/l of sodium hydroxide. Thus, these claims are further distinguishable from the teachings of Croud et al. As Croud et

al do not disclose each and every element of the present claims, either expressly or inherently, Croud et al do not anticipate the present claims under 35 U.S.C. §102.

It is therefore submitted that the methods, products and substrates defined by claims 1-13 are not anticipated by and are patentably distinguishable from the teachings of Willey et al, Showell et al, Francis et al, Thompson et al and Croud et al, whereby the rejections under 35 U.S.C. §103 have been overcome. Reconsideration is respectfully requested.

It is believed the above represents a complete response to the rejections and objections set forth in the Official Action, and places the present application in condition for allowance. Reconsideration and an early allowance are respectfully requested.

Respectfully submitted,

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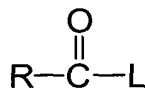
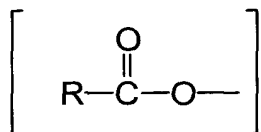
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VERSION WITH MARKINGS SHOWING CHANGES MADE

In the Specification:

The paragraph at page 4, lines 10-13 is amended as follows:

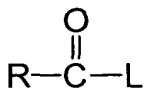
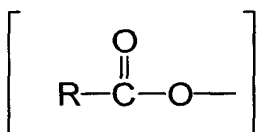
--a) a bleach activator of the general formula:



wherein R is an alkyl group having from about 5 to about 17, preferably from about 7 to about 11, carbon atoms and L is a leaving group;--

The paragraph at page 8, lines 1-12 is amended as follows:

--Particularly useful and preferred is the combination of hydrogen peroxide and hydrophobic bleach activators, and in particular the alkanoyloxy class of bleach activators having the general formula:

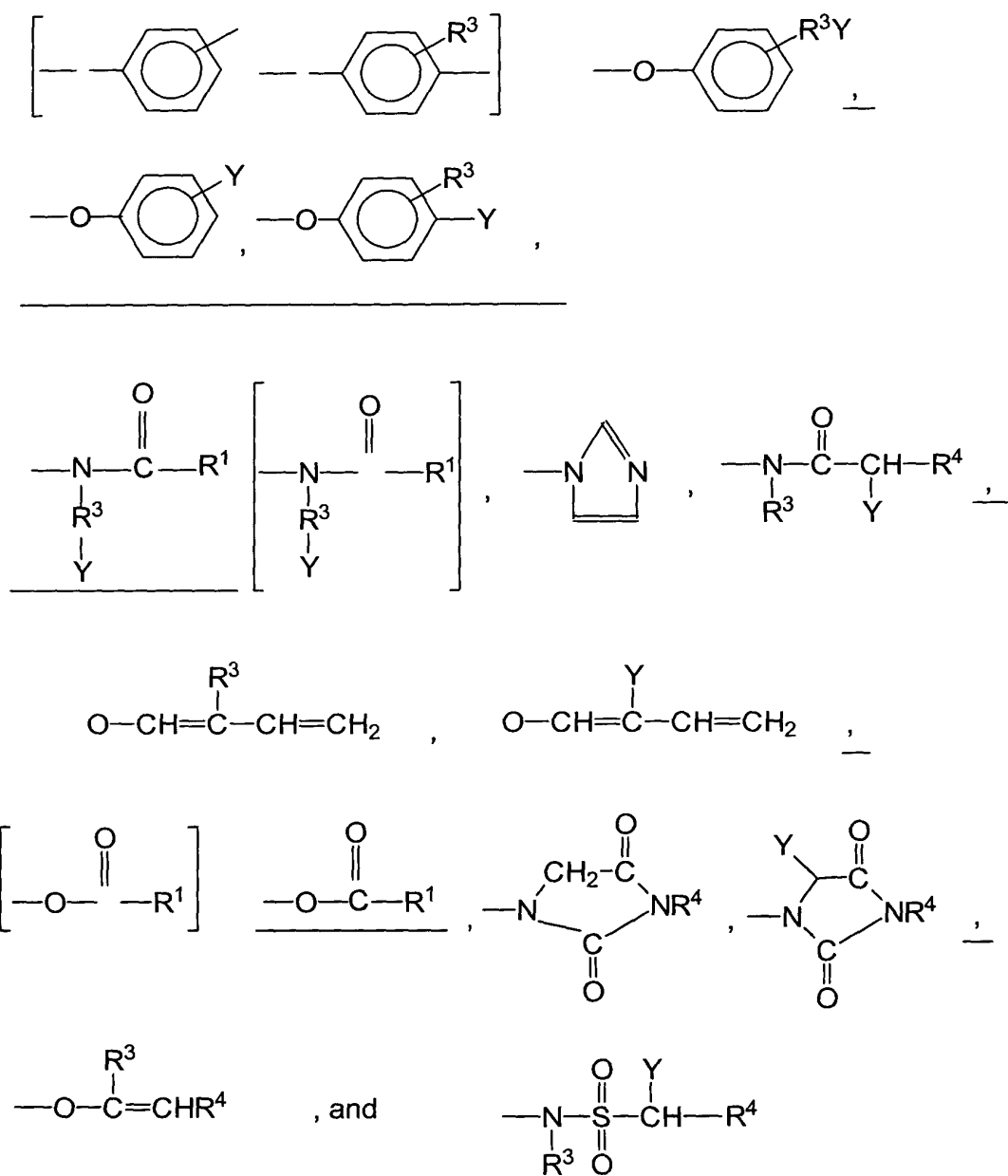


wherein R is an alkyl chain having from about 5 to about 17, preferably from about 7 to about 11 carbon atoms and L can be essentially any suitable leaving group. A leaving group is any

group that is displaced from the bleaching activator as a consequence of the nucleophilic attack on the bleach activator by the perhydroxide anion. This, the perhydrolysis reaction, results in the formation of the peroxycarboxylic acid. Generally, for a group to be a suitable leaving group it must exert an electron attracting effect. It should also form a stable entity so that the rate of the back reaction is negligible. This facilitates the nucleophilic attack by the perhydroxide anion.--

The paragraph at page 8, line 13 - page 9, line 5, is amended as follows:

The L group must be sufficiently reactive for the reaction to occur within the optimum time frame (e.g., a wash cycle). However, if L is too reactive, this activator will be difficult to stabilize for use in a bleaching composition. These characteristics are generally paralleled by the pKa of the conjugate acid of the leaving group, although exceptions to this convention are known. Ordinarily, leaving groups that exhibit such behavior are those in which their conjugate acid has a pKa in the range of from about 4 to about 13, preferably from about 6 to about 11 and most preferably from about 8 to about 11. For the purposes of the present invention, L is selected from the group consisting of:



and mixtures thereof, wherein R^1 is an alkyl, aryl, or alkaryl group containing from about 1 to about 14 carbon atoms, R^3 is an alkyl chain containing from 1 to about 8 carbon atoms, R^4 is H or R^3 , and Y is H or a solubilizing group.

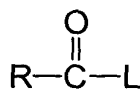
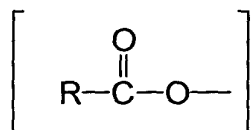
In the Claims:

Claims 1, 3-5, 9, 11, 15, 19, 21, 24, 29 and 33 are amended as follows:

1. (Amended) A method for the preparation of a non-finished textile component comprising the steps of providing a non-finished textile component, saturating said textile component with an aqueous bleaching solution comprising hydrogen peroxide and a hydrophobic bleaching agent, and allowing said bleaching solution to remain in contact with said textile component for a period of time sufficient to bleach said textile component wherein the resultant treated textile component has a whiteness value on the CIE index of at least about 70 or a fiber degradation increase of less than about 25%.

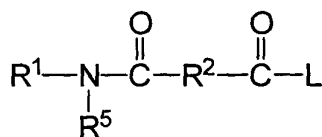
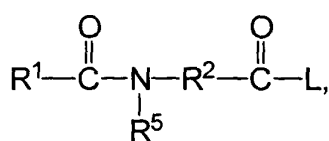
3. (Amended) The method as claimed in Claim 2 wherein said bleaching solution comprises hydrogen peroxide and a hydrophobic bleach activator selected from the group consisting of:

a) a bleach activator of the general formula:



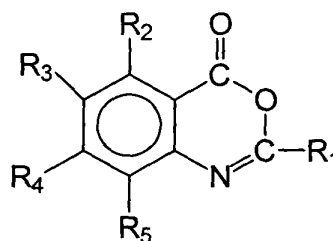
wherein R is an alkyl chain having from about 5 to about 17 carbon atoms and L is a leaving group:

b) a bleach activator of the general formula:



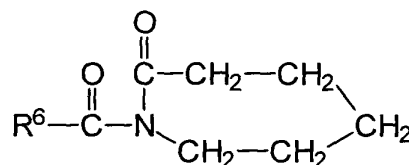
or mixtures thereof, wherein R^1 is an alkyl, aryl, or alkaryl group containing from about 1 to about 14 carbon atoms, R^2 is an alkylene, arylene or alkarylene group containing from about 1 to about 14 carbon atoms, R^5 is H or an alkyl, aryl, or alkaryl group containing from about 1 to about 10 carbon atoms, and L is a leaving group;

c) a benzoxazin-type bleach activator of the formula:



wherein R_1 is H, alkyl, alkaryl, aryl, or arylalkyl, and wherein R_2 , R_3 , R_4 , and R_5 may be the same or different substituents selected from the group consisting of H, halogen, alkyl, alkenyl, aryl, hydroxyl, alkoxyl, amino, alkylamino, $-COOR_6$, wherein R_6 is H or an alkyl group, and carbonyl [functions];

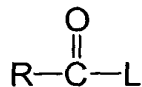
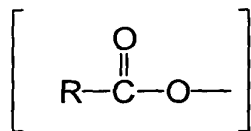
d) a N-acyl caprolactam bleach activator of the formula:



wherein R^6 is H or an alkyl, aryl, alkoxyaryl, or alkaryl group containing from 1 to 12 carbons; and

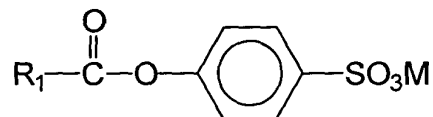
e) mixtures of a, b, c and d.

4. (Amended) The method as claimed in Claim 3 wherein said hydrophobic bleach activator is a bleach activator selected from the general formula:



wherein R is an alkyl chain having from about 8 to about 12 carbon atoms and L is a leaving group, the conjugate acid of which has a pKa from about 4 to about 13.

5. (Amended) The method as claimed in Claim 4 wherein said bleach activator is an [alkanoyloxybenzenesulfonates] alkanoyloxybenzenesulfonate of the formula:



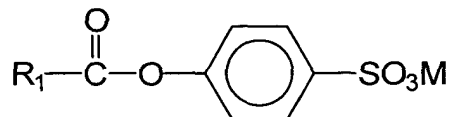
wherein R₁ is an alkyl group having from about 8 to about 11 carbon atoms and M is a suitable cation.

9. (Amended) The method as claimed in Claim 1 wherein said textile component [to] remains in contact with said bleaching solution for from about 15 to about 180 minutes.

11. (Amended) The method as claimed in Claim 8 wherein said bleaching [solutions] solution is at a temperature of from about 50 to about 80°C and said textile component remains in contact with said bleaching solution for from about 30 to about 60 minutes.

15. (Amended) The method as claimed in Claim 12 wherein said treated textile component experiences a fiber degradation [increase] increase of less than about 25%.

19. (Amended) The method as claimed in Claim 18 wherein said bleach activator is an [alkanoyloxybenzenesulfonates] alkanoyloxybenzenesulfonate of the formula:



wherein R₁ has from about 5 to about 17 carbon atoms and M is a suitable cation.

21. (Amended) The method as claimed in Claim 18 wherein said bleaching [solutions] solution is at a temperature of from about 50 to about 80°C and said textile component remains in contact with said bleaching solution for from about 30 to about 60 minutes.

24. (Amended) The method as claimed in Claim 18 wherein said textile component [to] remains in contact with said bleaching solution for from about 30 to about 60 minutes.

29. (Amended) The substrate as claimed in Claim 28 wherein said treated textile component experiences a fiber degradation [increase] increase of less than about 25%.

33. (Amended) The method as claimed in Claim 1 wherein said non-finished textile component fibers are selected from the group consisting of cotton, linen, jute, wool, silk, rayon, lyocell and combinations thereof.